PAIN MANAGEMENT
December 2003

Anonymous. "Can Dr. Scholl's relieve your foot and back pain?" *Consumer Reports.* 68, no. 11(2003): 47 UI 14584506.

Arnstein, P. "Comprehensive analysis and management of chronic pain." *Nursing Clinics of North America.* 38, no. 3(2003): 403-17 UI 14567199.

Given the pervasive effect of chronic pain, a comprehensive approach to nursing care is needed. Addressing the physical effects of persistent pain on multiple systems and bodily functions requires combining (drug and nondrug) interventions to reduce pain and improve functioning. Targeting anxiety, depression and anger effectively can halt or even reverse the escalation of pain attributed to emotions. Recognizing belief patterns associated with distress and disability, while challenging patients to rethink the truthfulness of their perceptions is an important step in helping patients think, feel, and do better. Eliciting self-reflective narratives about the context of pain in their lives taps into the spiritual domain and initiates processes of grieving, forgiveness, and acceptance that are needed to transcend perceived limits and find new meaning in their lives. By attending to social interactions, including therapeutic relationships, chronic pain patients can become more independent and involved in family or socially meaningful activities. Combined, nurses can help patients restore joy, functioning, and a sense of purpose despite the devastating toll persistent pain has taken. [References: 92]

Baron, E. D., et al. "Laser-assisted penetration of topical anesthetic in adults." *Archives of Dermatology.* 139, no. 10(2003): 1288-90 UI 14568832.

OBJECTIVE: To determine whether pretreatment of skin with erbium:YAG (Er:YAG) laser-assisted delivery facilitates the penetration of lidocaine cream to provide anesthesia suitable for needlesticks after just 5 minutes. DESIGN: Trial 1 was a double-blind randomized controlled trial, whereas trial 2 was a nonblinded randomized controlled trial. SETTING: The study was conducted in 2 facilities, an academic and a private clinical research unit. PARTICIPANTS: A total of 320 healthy volunteers, aged 18 to 65 years and of any Fitzpatrick skin phototype. INTERVENTIONS: Trial 1 involved an Er:YAG laser pretreatment to disrupt the stratum corneum followed by an application of 4% lidocaine cream on one arm, and a laser pretreatment plus placebo on the other arm. Trial 2 involved an application of 4% lidocaine cream alone on one arm, and a laser pretreatment followed by an application of 4% lidocaine cream on the other arm. MAIN OUTCOME MEASURE: Self-reported pain perception on a 100-mm visual analog scale after quick insertion and removal of a 25-gauge hypodermic needle on the treatment sites. RESULTS: Data from the 2 trials showed that there was a 62% pain reduction with laser pretreatment plus lidocaine compared with laser pretreatment plus placebo, and a 61% pain reduction with laser pretreatment plus lidocaine, compared with lidocaine

alone. The decrease in pain in both trials was statistically significant (P<.001). Adverse events reported 48 hours after treatment were few and mild. CONCLUSION: Treatment with the Er:YAG laser followed by lidocaine cream is a safe, effective, and efficient means of inducing skin anesthesia that significantly reduces the pain of hypodermic needle insertion.

Brunelle, R. L., et al. "Intramuscular picenadol in patients with postoperative pain." *British Journal of Clinical Pharmacology.* 36, no. 4(1993): 351-5 UI 12959314.

1. The analgesic efficacy and safety of a single 50 mg intramuscular dose of rac-picenadol, a centrally acting agonist-antagonist opioid analgesic, were compared with pethidine (meperidine) 100 mg and placebo in 60 patients with moderate to severe postoperative pain using hourly pain intensity and relief measurements for up to 6 h following injection of the study medications. 2. Both picenadol and pethidine were statistically significantly (P < 0.05) more effective than placebo in reducing pain intensity and in increasing total relief. Patients receiving picenadol and pethidine had higher frequency of somnolence than patients receiving placebo. In addition, patients receiving picenadol 50 mg experienced a higher incidence of confusion (30%), speech disorders (30%), and tremors (25%) than the patients receiving either pethidine or placebo. 3. These results were compared with those of a similar study which investigated the effects of a 25 mg intramuscular dose of picenadol vs pethidine and placebo. This comparison suggests that 25 mg of picenadol is a more acceptable dosage since both 25 and 50 mg were effective dosages.

Cannavino, C. R., et al. "Efficacy of transdermal ketoprofen for delayed onset muscle soreness." *Clinical Journal of Sport Medicine.* 13, no. 4(2003): 200-8 UI 12855921.

OBJECTIVE: To determine the efficacy of transdermal ketoprofen in reducing delayed-onset muscle soreness (DOMS), limiting systemic absorption, and improving postexercise function following repetitive muscle contraction. DESIGN: Double-blind, placebo-controlled clinical trial. SETTING: OrthoMed, University of California at San Diego, La Jolla, CA, U.S.A. PARTICIPANTS: Thirty-two healthy males 18 to 35 years old. INTERVENTIONS: Subjects performed a leg extension and flexion exercise program designed to create DOMS in quadriceps muscles. Subjects were randomly assigned to receive any combination of transdermal ketoprofen or placebo cream, applied TID, to their right and left quadriceps. MAIN OUTCOME MEASURES: Subjective measure of DOMS in quadriceps muscles, serum ketoprofen levels, strength index scores (a measure of postexercise function), and adverse reactions were assessed at baseline, 24 hours, and 48 hours. RESULTS: Within-subjects analysis (n = 16) showed a significant reduction in DOMS scores in legs receiving transdermal ketoprofen compared with legs receiving placebo cream (P = 0.002 at 48 hours and 0.000 at 24 and 48 hours combined). Between-subjects analysis (n = 16) showed a marginally significant reduction in DOMS scores at 48 hours (P = 0.05 in right legs and 0.053 in left legs). Systemic absorption was minimal, with serum ketoprofen levels in the ng/mL range. No differences in strength index scores were observed. No adverse reactions were reported. CONCLUSIONS: Transdermal ketoprofen appears to be effective in reducing self-reported DOMS after repetitive muscle contraction, particularly after 48 hours. Systemic absorption of the drug was minimal. Treatment did not appear to have any effect on postexercise function, and there were no reported adverse reactions.

Cepeda, M. S., et al. "What decline in pain intensity is meaningful to patients with acute pain?" *Pain.* 105, no. 1-2(2003): 151-7 UI 14499431.

Despite widespread use of the 0-10 numeric rating scale (NRS) of pain intensity, relatively little is known about the meaning of decreases in pain intensity assessed by means of this scale to patients. We aimed to establish the meaning to patients of

declines in pain intensity and percent pain reduction. Upon arrival to the postanesthesia care unit, postsurgical patients rated their baseline pain intensity on both a 0-10 NRS and on a 4-point verbal scale. Patients whose NRS was higher than 4/10 received intravenous opioids until their pain intensity declined to 4/10 or lower. During opioid titration, patients were asked every 10 min to rate pain intensity on a NRS and to indicate the degree of pain improvement on a 5-point Likert scale from 'no improvement' to 'complete pain relief'. Seven hundred adult patients were enrolled. For patients with moderate pain, a decrease of 1.3 units (20% reduction) corresponded to 'minimal' improvement, a decrease of 2.4 (35% reduction) to 'much' improvement, a decrease of 3.5 units (45% reduction) corresponded to 'very much' improvement. For patients with severe pain, the decrease in NRS pain score and the percentage of pain relief had to be larger to obtain similar degrees of pain relief. The change in pain intensity that is meaningful to patients increases as the severity of their baseline pain increases. The present findings are applicable in the clinical setting and research arena to assess treatment efficacy.

Cerchietti, L. C., et al. "Potential utility of the peripheral analgesic properties of morphine in stomatitis-related pain: a pilot study." *Pain.* 105, no. 1-2(2003): 265-73 UI 14499444.

To determine the potential clinical utility of peripheral opioid action using a clinical model of cancer treatment-induced inflammation and pain that allowed for topical application of morphine in the damaged tissue (oral mucosa). This pilot study followed a two blocks design. Ten patients with painful oral mucositis were enrolled in the first block (dose-response relationship finding) and randomized in two groups to receive oral rinses with 15 ml of either 1 per thousand or 2 per thousand morphine solution. Twenty-two patients were enrolled into the second block (efficacy and safety determination). Additionally, serum concentrations of morphine were measured in five representative patients. In the first block (n=10) a dose-response relationship for topical morphine was found. Rinses with 2 per thousand -morphine solution showed better pain relief (median 80%, range 70-80%) than those with 1 per thousand (median 60%, range 55-70%; P=0.0238). Therefore, subsequent patients enrolled for the second block (n=22) received oral rinses with 2 per thousand -morphine solution. In these patients the time to good (>or=50%) or to complete (100%) pain relief was 28 (+/-12)min after the first mouthwash, and the duration of relief was on average 216 (+/-25)min. Twenty patients (90%) received the successive mouthwashes every 3 h and 10% of them every 2 h. The duration of severe pain at the moment of swallowing was 5.17 (+/-1.47) days. Only six patients needed supplementary analgesia, and the time elapsed before the first supplemental analgesic was 1.18 (+/-0.8) days. The duration of severe functional impairment was 1.52 (+/-1.31) days, thus allowing us to feed the patient by mouth with liquid-food supplementation. During our experiment no systemically active detectable concentrations of morphine were found (GC-MS analysis). The most important side effect attributable to morphine mouthwashes was burning/itching sensation (very mild to mild intensity). Patients with painful chemoradiotherapy-induced stomatitis could be alleviated using topical morphine mouthwashes.

Compton, P., and P. Athanasos. "Chronic pain, substance abuse and addiction." *Nursing Clinics of North America.* 38, no. 3(2003): 525-37 UI 14567207.

Health care professionals face numerous challenges in assessing and treating chronic pain patients with a substance abuse history. Societal perspectives on morality and criminality, imprecise addiction terminology, litigation fears, and genuine concern for a patient's relapse into or escalation of substance abuse result in unrelieved and under-relieved pain in precisely the population that--as increasing evidence indicates--is generally intolerant of pain. Before adequate pain relief can occur in chronic pain patients with current or past substance abuse issues, it is

imperative that the clinician recognize addiction as a disease with known symptoms and treatments. Further, the clinician must realize the difference between true addiction and similar conditions, so the patient's condition can be monitored and regulated properly. Although clinicians are often reluctant to medicate with opioids, it is always best to err on the side of adequate pain relief. Withholding opioids from chronic pain patients in order to avoid the onset or relapse of addiction is contrary to the growing body of evidence and results only in unnecessary pain for the patient. Chronic pain in patients with a history of addictive disease can be treated successfully with opiate analgesia; it just requires caution and careful monitoring of medication use. If addiction is treated as a known risk when providing opioid analgesia to a recovering addict, its development can be minimized while pain relief is provided. [References: 39]

Dalton, J. A., and P. Coyne. "Cognitive-behavioral therapy: tailored to the individual." *Nursing Clinics of North America.* 38, no. 3(2003): 465-76, vi UI 14567203.

Cognitive-behavioral therapy focuses on the cognitive, affective, and behavioral components of the pain experience. Cognitive-behavioral strategies can be used to treat chronic pain and chronic intermittent pain. The strategies concentrate on emotional, behavioral, and social responses, helping patients to increase their feelings of control or feelings of self efficacy regarding control. [References: 86]

Davis, B. A., and J. T. Finnoff. "Diagnosis and management of thoracic and rib pain in rowers." *Current Sports Medicine Reports.* 2, no. 5(2003): 281-7 UI 12959711.

Thoracic and lumbar injuries can dramatically affect a rower's performance and lead to time lost from practice and competition. Even though the number of injuries encountered by elite and competitive rowers appears to have increased over the past 20 years, rowing-specific research has been very limited in its scope and ability to guide practitioners caring for these athletes. Specifically, case reports relating to rib stress fractures abound, yet very few controlled studies discuss the mechanisms of injury and appropriate management of thoracic injuries. We believe that the identification and treatment of kinetic chain abnormalities in areas distant to the site of injury, such as the lower extremities, pelvis, and lumbar spine, should be an integral part of thoracic injury evaluation and treatment. Simultaneous evaluation of training regimen and equipment is also crucial to the management of rowers suffering from thoracic injuries. [References: 38]

Davis, K. D. "Neurophysiological and anatomical considerations in functional imaging of pain." *Pain.* 105, no. 1-2(2003): 1-3 UI 14499413.

Day, R. "Taking control of pain." *Professional Nurse.* 19, no. 1(2003): 43 UI 14515822.

Delgado-Lopez, P., et al. "Trigeminal nucleus caudalis dorsal root entry zone radiofrequency thermocoagulation for invalidating facial pain." *Neurocirugia (Asturias, Spain).* 14, no. 1(2003): 25-32; discussion 32 UI 12655381.

INTRODUCTION: Facial pain syndromes occasionally result in desperate clinical settings completely unresponsive to any known therapy. Trigeminal nucleus caudalis dorsal root entry zone (DREZ) lesion is reported to be of benefit in such cases. In 1982 Nashold performed the first DREZ caudalis lesion in a patient with anaesthesia dolorosa. PATIENTS AND METHODS: From 1994 to 2002 we have performed six DREZ caudalis lesions on five patients with extremely invalidating facial pain resistant to multiple pharmacological and surgical therapies. Pain was secondary to previous craniofacial surgery in all but one case. Pain presented as anaesthesia dolorosa or atypical facial pain so severe as to interfere with personal hygiene and

even to prevent patients from oral feeding. A midline suboccipital approach was used and radiofrequency lesions (at the trigeminal nucleus caudalis in the cervicomedullary junction) were made at 1-mm intervals, 75 (o)C for 15 seconds each along the ipsilateral posterolateral sulcus from the cervical DREZ up to the obex. RESULTS: Pain relief was complete and permanent in two patients. Three patients experienced significant improvement but pain recurred in two (weeks to a few months after the procedure). No patient's pain was made worse. A patient with persistent postoperative nasolabial pain was re-operated on (improving again but ultimately remaining unchanged). Air venous embolism related to the sitting position (3 patients) during surgery and bradycardia due to manipulation in medulla (2 patients) occurred during some of the procedures without any cardiovascular or neurological repercussion. Postoperative complications included mild and transient ataxia and monoparesia (3 patients). DISCUSSION: Facial pain secondary to craniofacial surgery is known to be among the least responsive to treatment and a true challenge for pain clinicians. Actual indications for this procedure, operative technical details and the results of our series compared to previous reports are reviewed. CONCLUSION: Trigeminal nucleus caudalis radiofrequency thermocoagulation is an effective neurosurgical procedure for the treatment of chronically debilitating and desperate facial pain syndromes with acceptable morbidity.

Donaldson, K. M., K. D. Dawkins, and D. G. Waller. "A comparison of the acute haemodynamic effects of nisoldipine and nifedipine during treatment with atenolol in patients with coronary artery disease." *British Journal of Clinical Pharmacology.* 36, no. 4(1993): 315-21 UI 12959309.

1. The acute haemodynamic effects of intravenous nisoldipine (1, 2, 4 microg kg(-1)) and nifedipine (2.5, 5, 10 microg kg(-1)) were compared in a randomised, within-patient crossover study. Fifteen male patients with stable angina pectoris treated with atenolol were studied after undergoing routine cardiac catheterisation. 2. Nisoldipine caused a dose-related fall in systemic vascular resistance (maximum 22%) associated with an increase in heart rate and cardiac index (18%) and a fall in mean arterial pressure (7%). 3. By contrast, nifedipine was associated with a significant increase in heart rate but systemic vascular resistance, cardiac index and mean arterial pressure remained unaltered. 4. At doses with equivalent effects on heart rate (2 microg kg(-1) nisoldipine; 10 microg kg(-1) nifedipine) acute dosing with nisoldipine caused a significantly greater fall in systemic vascular resistance and increase in cardiac index, whilst nifedipine caused a greater reduction in stroke volume index and left ventricular stroke work index. 5. The results suggest that, when combined with atenolol, acute dosing with nisoldipine may have a more complementary haemodynamic profile than nifedipine. The implications of this finding for chronic oral dosing in patients with impaired left ventricular function should be evaluated.

Faucett, J., and D. McCarthy. "Chronic pain in the workplace." *Nursing Clinics of North America.* 38, no. 3(2003): 509-23 UI 14567206.

Chronic pain, especially chronic back pain, is costly to workers, their families, employers, and society. Successful return to productive work life for the worker with chronic pain requires multi-disciplinary efforts, including those of the nurse case manager, occupational health nurse, and nursing specialist in pain management. Sensitivity to the dynamics of multiple stakeholders in the RTW process is essential because of their diverse perspectives. Successful RTW can be facilitated by a combination of approaches, including case management, worker capacity evaluation, ergonomic job analysis, team design of job modifications, appropriate medical treatment, and self management by the worker. [References: 43]

Fosnocht, D. E., et al. "Pain medication use before ED arrival." *American Journal of Emergency Medicine.* 21, no. 5(2003): 435-7 UI 14523885.

The objective of this study was to determine the frequency and types of pain medications taken before ED arrival based on pain intensity, duration of pain, chief complaint, gender, age, and race. A convenience sample of patients in pain was enrolled in this university hospital-based prospective, observational study. A total of 1233 patients were enrolled. Five hundred thirty-nine of 1233 (44%) patients took pain medication before arrival. Two hundred three (38%) took ibuprofen, 147 of 539 (27%) took oral opioids, and 135 of 539 (25%) took acetaminophen, which were the most frequently used medications. Severity of pain, age, duration of pain, and chief complaint were associated (chi-squared P <.05) with variations in prior medication use. Race and gender were not associated (chi-squared P >.05) with differences in medication use before arrival. Many patients (44%) take medication before arrival in the ED. Age, severity and duration of pain, as well as chief complaint are associated with differences in frequency of self-administered medication.

Gear, R. W., et al. "Dose ratio is important in maximizing naloxone enhancement of nalbuphine analgesia in humans." *Neuroscience Letters.* 351, no. 1(2003): 5-8 UI 14550900.

The analgesic effect of kappa partial agonist opioids (i.e. nalbuphine, pentazocine and butorphanol) is significantly greater in women. Recent evidence suggests that this sexual dimorphism may result from a naloxone-sensitive anti-analgesic effect that is activated along with, and summates with, the analgesic effect of these agents, resulting in decreased analgesia or increased pain. For example, nalbuphine (5 mg) produces profound anti-analgesia (i.e. enhanced pain) in men, but addition of a low dose of the opioid receptor antagonist naloxone (0.4 mg, opioid antagonist) induces significant analgesia in men and enhances nalbuphine analgesia in women. To further delineate the dose-dependent relationship of nalbuphine and naloxone, we recently evaluated the effect of a lower dose of nalbuphine (2.5 mg) with and without naloxone (0.4 mg) on dental postoperative pain. In women, nalbuphine alone induced modest short duration analgesia, which was antagonized by the addition of naloxone. In men, this dose of nalbuphine alone did not produce analgesia or anti-analgesia, and naloxone did not alter the response to nalbuphine. Thus, it appeared that the 2.5 mg dose of nalbuphine was not sufficient to induce anti-analgesia while the 0.4 mg dose of naloxone was able to antagonize the analgesic effect of nalbuphine, at least in women. In the current study, we tested the hypothesis that an important determinant of naloxone enhancement of nalbuphine analgesia is the dose ratio of nalbuphine to naloxone. Since a dose ratio of 12.5:1 (i.e. 5 mg nalbuphine:0.4 mg naloxone) resulted in analgesic enhancement, but a dose ratio of 6.25:1 (2.5 mg:0.4 mg) did not, we tested the same, lower, dose of nalbuphine (2.5 mg) in combination with a lower dose of naloxone (0.2 mg) to maintain the 12.5:1 dose ratio. This lower dose of naloxone significantly prolonged the analgesic effect of nalbuphine in both men and women, suggesting that the anti-analgesic effect of nalbuphine is present in both sexes at the 2.5 mg dose and that the dose ratio of nalbuphine to naloxone is an important determinant of the analgesic efficacy of this combination.

Golembiewski, J. A. "Analgesia from opioids: the complex relationship between drug dose and effect." *Journal of Perianesthesia Nursing.* 18, no. 4(2003): 269-71 UI 12923756.

Gordon, D. B. "Nonopioid and adjuvant analgesics in chronic pain management: strategies for effective use." *Nursing Clinics of North America.* 38, no. 3(2003): 447-64, vi UI 14567202.

Nonopioid and adjuvant analgesics encompass a huge range of heterogenous drugs that differ chemically and mechanistically. These drugs generally are prescribed for mild-to-moderate pain, as coanalgesics for severe pain, or to target specific pain-generating mechanisms. This article provides an overview of some of the more commonly used nonopioid and adjuvant analgesics used to treat chronic pain, including salicylates, acetaminophen, nonsteroidal anti-inflammatory drugs, tricyclic antidepressants, anticonvulsants, N-Methyl-D-Aspartate receptor antagonists, lidocaine, skeletal muscle relaxants, and topical analgesics. [References: 52]

Grossman, S. A., et al. "Predictors of delay in presentation to the ED in patients with suspected acute coronary syndromes." *American Journal of Emergency Medicine.* 21, no. 5(2003): 425-8 UI 14523883.

Delays in seeking medical attention for patients with acute coronary syndromes (ACS) preclude early application of life-saving treatment and diminish efficacy. Previous studies suggest 3-hour delays between onset of symptoms and ED arrival in patients with typical presentations of acute myocardial infarction (AMI). A prospective observational study was conducted in an urban ED measuring lag time (LT) among adults presenting within 48 hours of onset of symptoms suggestive of ACS. Univariate and multiple regression analyses were performed on 5 predictors: age, sex, symptoms at presentation, and 2 different outcomes (AMI and ACS). Three hundred seventy-four patients were enrolled. Mean age was 63 years with 38% 70 years or older. Seventy-three percent of all patients with suspected ACS presented with chest pain, 27% with atypical symptoms. Overall mean LT was 8.7 hours (standard deviation 11). In subgroup analysis, patients aged >/=70 years were more likely to have LTs >12 hours (29% vs. 19% P =.043) and patients without chest pain had longer mean LTs (11.6 vs. 7.6 hours, P =.01). Delay in ED presentation is group specific. Advanced age and patients with atypical symptoms are predictive of longer LTs. Contrary to previously published data, patients with symptoms suspicious for ACS can delay an average of 9 hours, which might alter current thinking in the prevention and care of these patients.

Gunnarsdottir, S., H. S. Donovan, and S. Ward. "Interventions to overcome clinician- and patient-related barriers to pain management." *Nursing Clinics of North America.* 38, no. 3(2003): 419-34, v UI 14567200.

Barriers to optimal cancer pain management exist among clinicians and patients, and within the healthcare system. This article focuses on clinician- and patient-related barriers and the interventions that have been tested to overcome them. Although individual studies have shown promise in improving patient outcomes, overall the studies do not provide clear answers to guide practice. Further research is required to determine what components of educational interventions are necessary to facilitate optimal cancer pain management. [References: 93]

Hakkinen, A., et al. "Does the outcome 2 months after lumbar disc surgery predict the outcome 12 months later?" *Disability & Rehabilitation.* 25, no. 17(2003): 968-72 UI 12851085.

PURPOSE: To assess the prognostic value of some preoperative and early post-operative indicators in the prediction of disability 14 months after lumbar disc surgery. METHODS: Of 173 patients, who had participated in baseline measurements, 145 (84%) attended the 14-month follow-up. Before surgery the duration and intensity of pain was assessed. Follow-up questionnaires were completed during check-ups and included items on pain (VAS), Oswestry and Million disability indices, depression (BDS) and work status. RESULTS: Two months after surgery average back pain was 67% lower and leg pain 70% lower than pre-operatively. The median Oswestry and Million disability indices were 14 and 15 at 2-

months and remained low also at 14-months check-up. Further, the post-operative Oswestry and Million disability indices and BDS were highly associated with 14-month back and leg pain. Although the outcome of the patients was mostly good, 5% and 8% of them, respectively, reported severe pain at 2- and 14-month check-ups. CONCLUSIONS: As recovery following lumbar disc surgery occurred to a great extent during the first 2 months, the early post-operative outcome appears to be quite a reliable indicator of the postoperative outcome in 1-year follow-up. The strong association between pain and the disability indices allows us to conclude that both the Million and Oswestry indices are clinically useful instruments in the evaluation of outcome in these cases.

Hormbrey, E., A. Pandya, and H. Giele. "Adhesive retention dressings are more comfortable than alginate dressings on split-skin-graft donor sites." *British Journal of Plastic Surgery.* 56, no. 5(2003): 498-503 UI 12890465.

Painful split-skin-graft donor sites remain a common problem for patients. We undertook a prospective randomised trial to examine the comparative comfort and ease of care of two different donor-site dressings. One dressing is the alginate Kaltostat, the standard plastic-surgical dressing in the UK and abroad, and the other is the adhesive retention tape Mefix, a novel use of a readily available dressing. We randomised 50 patients requiring split-skin grafts to receive either alginate (Kaltostat) or retention (Mefix) donor-site dressings. Dressings were assessed by interview and questionnaire at 24, 72 h and 2 weeks, and by wound review at 2 weeks. Retention dressings were found to be more comfortable, required less nursing intervention and allowed patients easier mobility with a greater range of daily activities, especially washing, without compromising wound healing. We recommend adhesive retention dressings as cost-effective comfortable dressings, which readily conform to any donor site.

Huynh, T., et al. "Effect of platelet glycoprotein IIb/IIIa receptor blockade with tirofiban on adverse cardiac events in women with unstable angina/non-ST-elevation myocardial infarction (PRISM-PLUS Study)." *American Heart Journal.* 146, no. 4(2003): 668-73 UI 14564321.

BACKGROUND: Previous trials demonstrated the efficacy of platelet glycoprotein IIb/IIIa receptors blockade with tirofiban in reducing acute ischemic events in patients with unstable angina/non-ST-elevation myocardial infarction. Little is known about the effect of tirofiban among women with acute coronary syndromes. OBJECTIVE: We aimed to determine the benefit and safety of tirofiban plus heparin versus heparin alone on cardiac ischemic events among women with unstable angina/non-ST-elevation myocardial infarction. METHODS AND RESULTS: We performed a post hoc analysis of all women enrolled in the PRISM-PLUS trial. At early time points, there appeared to be a reduction of the primary composite end point of death, myocardial infarction, or refractory ischemia among women treated with tirofiban plus heparin (RR, 0.78 and 0.67) compared with women treated with heparin alone. However, at 30 and 180 days, there was no significant reduction of events with the combination therapy of tirofiban plus heparin (treatment-by-sex interaction, P =.05). Death or myocardial infarction was not significantly reduced by the combination therapy among women at all time points. CONCLUSIONS: Although the effects of tirofiban in reducing the primary composite outcome were similar among men and women early in the study, there appeared to be a difference at the later time points. In particular, tirofiban was effective among men, but there was no clear effect among women at 30 and 180 days.

Kampe, S., et al. "Concept for postoperative analgesia after pedicled TRAM flaps: continuous wound instillation with 0.2% ropivacaine via multilumen catheters. A

report of two cases." *British Journal of Plastic Surgery.* 56, no. 5(2003): 478-83 UI 12890461.

Pedicled TRAM flap surgery is a complex procedure characterised by an extensive wound site. We present two patients with efficient postoperative pain relief by continuous wound instillation of ropivacaine 0.2% via two multilumen catheters. The catheters were placed subcutaneously before the wound closure through the umbilicus into the abdominal wound, and under the autologous flap into the breast. Each multilumen catheter provides even distribution for local anaesthetics over 12.5 cm. At the end of surgery, patients received a single shot dose of local anaesthetic via the pain catheters. After surgery the continuous infusion of ropivacaine 0.2% was commenced at a rate of 10 ml/h per catheter. Pain scores at rest and on coughing were low on the first postoperative day, and later zero. No medication for breakthrough pain was required throughout the recovery period, and the patients experienced no adverse events linked to the analgesia scene. Patient satisfaction was excellent, and quality of recovery score was superior.

Kelly, K. M., L. O. Svaasand, and J. S. Nelson. "Optimization of laser treatment safety in conjunction with cryogen spray cooling." *Archives of Dermatology.* 139, no. 10(2003): 1372-3 UI 14568848.

Kilmer, S. L., et al. "Full-face laser resurfacing using a supplemented topical anesthesia protocol." *Archives of Dermatology.* 139, no. 10(2003): 1279-83 UI 14568831.

BACKGROUND: Laser resurfacing has become a popular modality for the treatment of photodamaged skin, rhytids, and acne scarring. In many cases, this procedure is performed under general anesthesia or intravenous sedation in conjunction with nerve blocks and local infiltration. OBJECTIVE: To evaluate the safety and efficacy of facial carbon dioxide laser resurfacing using a supplemented topical anesthesia protocol. DESIGN: Nonrandomized case series of patients observed for 1 year. SETTING: Outpatient surgery center. PATIENTS: Two hundred consecutive patients undergoing treatment for facial rhytids or acne scarring.Intervention Full-face carbon dioxide laser resurfacing procedures were performed using a supplemented topical anesthesia protocol. Pretreatment medications included diazepam, oral analgesics, and intramuscular ketorolac tromethamine. MAIN OUTCOME MEASURES: Tolerability of procedure, healing times, and adverse effects. RESULTS: Topical anesthesia provided effective and sufficient anesthesia in most cases. Only 10 of 200 patients required additional anesthesia (regional nerve blocks and/or local infiltration). Substantial improvement of rhytids, photodamage, and acne scarring was observed. Posttreatment hypopigmentation was seen in 1 patient. Scarring was not observed.Conclusion A supplemented topical anesthesia protocol for full-face laser resurfacing is a safe and effective alternative to traditional anesthesia strategies.

Krenzischek, D. A., L. Wilson, and Aspan. "An introduction to the ASPAN pain and comfort clinical guideline." *Journal of Perianesthesia Nursing.* 18, no. 4(2003): 228-36 UI 12923748.

Laurion, S., and S. J. Fetzer. "The effect of two nursing interventions on the postoperative outcomes of gynecologic laparoscopic patients." *Journal of Perianesthesia Nursing.* 18, no. 4(2003): 254-61 UI 12923753.

Anecdotal reports support research findings in documenting the high incidence of negative postoperative outcomes after gynecologic (GYN) laparoscopic surgery. Three outcome measures, postoperative pain, postoperative nausea and vomiting (PONV), and length of stay, have received considerable attention. Two nursing interventions frequently suggested for their positive effects are guided imagery and

music therapy. An experimental pilot study was conducted to determine the effects of these nursing inventions on postoperative pain, PONV, and length of stay for GYN laparoscopic patients (n = 84). During the perioperative period, patients were randomly assigned to one of 3 interventions: guided imagery audiotapes (GI), music audiotapes (MU), or standard care (C), and outcome measures were evaluated. Results indicated that patients in both the guided imagery and music groups had significantly less pain on PACU discharge to home than the patients in the control group. These findings suggest that both guided imagery and music are effective strategies in improving pain, a difference that becomes apparent when the patient is ready to be discharged. It is possible that these interventions act as distractions in reducing the report of negative postoperative outcomes.

Lynch, M. "New pain standards changing patterns of care in the U.S." *Oklahoma Nurse.* 48, no. 3(2003): 31 UI 14528735.

Neelima, G., et al. "A review of the acute pain service in Hospital Kuala Lumpur." *Medical Journal of Malaysia.* 58, no. 2(2003): 167-79 UI 14569736.

This study is a review of the Acute Pain Service in Hospital Kuala Lumpur for the years 1998 to 2001. 5042 records from post-operative patients were analysed. The majority of patients (81.8%) had satisfactory pain control. Eighty-two percent of patients experienced only mild pain at rest on the first post-operative day. The highest pain score occurred on the first day in 68.3% of patients. Nausea or vomiting occurred in 23.2% of the patients. Eight patients had respiratory depression. The low pain scores recorded by most patients and the low incidence of side effects reflect the efficiency of the service provided.

Pappagallo, M., and E. J. Haldey. "Pharmacological management of postherpetic neuralgia." *CNS Drugs.* 17, no. 11(2003): 771-80 UI 12921490.

Postherpetic neuralgia, which occurs most typically in older persons, is one of the most common and serious complications of herpes zoster (or shingles). It is a chronic neuropathic pain syndrome and remains one of the most difficult pain disorders to treat. Known beneficial agents include antidepressants, antiepileptic drugs, opioid analgesics, local anaesthetics, capsaicin and other, less applied, modalities. Although monotherapy is commonly applied, no single best treatment for postherpetic neuralgia has been identified; nevertheless, gabapentin (antiepileptic) and transdermal lidocaine (anaesthetic) are often used as the first-choice treatments. Recent research has shed light on possible pain mechanisms as well as new avenues of treatment, which are discussed in the article. For patients with pain that is not adequately controlled, individualised treatment plans must be pursued. It is critical to recognise that postherpetic neuralgia, while difficult to manage, can be a treatable neuropathic pain syndrome. [References: 92]

Pasero, C. "Epidural analgesia for postoperative pain." *AJN, American Journal of Nursing.* 103, no. 10(2003): 62-4 UI 14530709.

Pasero, C. "Multimodal balanced analgesia in the PACU." *Journal of Perianesthesia Nursing.* 18, no. 4(2003): 265-8 UI 12923755.

Peters, R. J., et al. "Effects of aspirin dose when used alone or in combination with clopidogrel in patients with acute coronary syndromes: observations from the Clopidogrel in Unstable angina to prevent Recurrent Events (CURE) study." *Circulation.* 108, no. 14(2003): 1682-7 UI 14504182.

BACKGROUND: We studied the benefits and risks of adding clopidogrel to different doses of aspirin in the treatment of patients with acute coronary syndrome (ACS). METHODS AND RESULTS: In the Clopidogrel in Unstable angina to prevent

Recurrent Events (CURE) trial, 12 562 patients with ACS using aspirin, 75 to 325 mg daily, were randomized to clopidogrel or placebo for up to 1 year. In this analysis, patients were divided into the following 3 aspirin dose groups: < or =100 mg, 101 through 199 mg, and > or =200 mg. The combined incidence of cardiovascular death, myocardial infarction, or stroke was reduced by clopidogrel regardless of aspirin dose, as follows: < or =100 mg, 10.5% versus 8.6% (relative risk [RR], 0.81 [95% CI, 0.68 to 0.97]); 101 to 199 mg, 9.8% versus 9.5% (RR, 0.97 [95% CI 0.77 to 1.22]); and > or =200 mg, 13.6% versus 9.8% (RR, 0.71 [95% CI, 0.59 to 0.85]). The incidence of major bleeding increased with increasing aspirin dose both in the placebo group (1.9%, 2.8%, and 3.7%, respectively; P=0.0001) and the clopidogrel group (3.0%, 3.4%, and 4.9%, respectively; P=0.0009); thus, the excess risk with clopidogrel was 1.1%, 1.2%, and 1.2%, respectively. The adjusted hazard ratio for major bleeding for the highest versus the lowest dose of aspirin was 1.9 (95% CI 1.29 to 2.72) in the placebo group, 1.6 (95% CI 1.19 to 2.23) in the clopidogrel group, and 1.7 (95% CI 1.36 to 2.20) in the combined group. CONCLUSIONS: In patients with ACS, adding clopidogrel to aspirin is beneficial regardless of aspirin dose. Bleeding risks increase with increasing aspirin dose, with or without clopidogrel, without any increase in efficacy. Our findings suggest that the optimal daily dose of aspirin may be between 75 and 100 mg, with or without clopidogrel.

Rakel, B., and J. O. Barr. "Physical modalities in chronic pain management." *Nursing Clinics of North America.* 38, no. 3(2003): 477-94 UI 14567204.

The following conclusions can be made based on review of the evidence: There is limited but positive evidence that select physical modalities are effective in managing chronic pain associated with specific conditions experienced by adults and older individuals. Overall, studies have provided the most support for the modality of therapeutic exercise. Different physical modalities have similar magnitudes of effects on chronic pain. Therefore, selection of the most appropriate physical modality may depend on the desired functional outcome for the patient, the underlying impairment, and the patient's preference or prior experience with the modality. Certain patient characteristics may decrease the effectiveness of physical modalities, as has been seen with TENS. These characteristics include depression, high trait anxiety, a powerful others locus of control, obesity, narcotic use, and neuroticism. The effect on pain by various modalities is generally strongest in the short-term period immediately after the intervention series, but effects can last as long as 1 year after treatment (e.g., with massage). Most research has tested the effect of physical modalities on chronic low back pain and knee OA. The effectiveness of physical modalities for other chronic pain conditions needs to be evaluated more completely. Older and younger adults often experience similar effects on their perception of pain from treatment with physical modalities. Therefore, use of these modalities for chronic pain in older adults is appropriate, but special precautions need to be taken. Practitioners applying physical modalities need formal training that includes the risks and precautions for these modalities. If practitioners lack formal training in the use of physical modalities, or if modality use is not within their scope of practice, it is important to consult with and refer patients to members of the team who have this specialized training. Use of a multidisciplinary approach to chronic pain management is of value for all adults and older individuals in particular [79-81]. Historically, physical therapists have been trained to evaluate and treat patients with the range of physical modalities discussed in this article. Although members of the nursing staff traditionally have used some of these modalities (e.g. some forms of heat or cold and massage), increasing numbers of nurses now are being trained to apply more specialized procedures (e.g., TENS). Healthcare professionals must be knowledgeable about the strength of evidence underlying the use of physical modalities for the management of chronic pain. Based on the limited research

evidence available (especially related to assistive devices, orthotics, and thermal modalities), it often is difficult to accept or exclude select modalities as having a potential role in chronic pain management for adults and older individuals. Improved research methodologies are needed to address physical modality effectiveness better. [References: 81]

Rifat, S. F., and J. L. Moeller. "Diagnosis and management of headache in the weight-lifting athlete." *Current Sports Medicine Reports.* 2, no. 5(2003): 272-5 UI 12959709.

Weight lifters suffer from the same headache syndromes that affect all human beings. They are also susceptible to headache types brought on by their activity. Three headache syndromes, cervicogenic headache, benign exertional headache, and effort-induced migraine headache, appear to be more common in the weight-lifting athlete. This article discusses the diagnosis and treatment of these headache syndromes. [References: 21]

Roe, M. T., et al. "Changing the model of care for patients with acute coronary syndromes." *American Heart Journal.* 146, no. 4(2003): 605-12 UI 14564312.

Acute coronary syndromes (ACS) represent a major cause of morbidity and mortality for patients with cardiovascular disease, but evidence-based therapies shown to improve outcomes for ACS are often underused in clinically eligible patients. Although clinical practice guidelines have been developed to provide standards for the diagnosis and treatment of patients with ACS and to provide physicians with a framework for clinical decision-making, multiple obstacles have hindered their implementation and questions remain about the applicability of guidelines for diverse clinical situations. Systematic reviews of quality-improvement studies have shown that multifaceted approaches using targeted educational interventions, creation of quality standards, and regular performance feedback are needed to ensure sustained improvements in care. Approaches to quality improvement thus are being redirected to focus on multidisciplinary collaborations designed to improve the entire process of care for patients with ACS. Multiple large observational registries and quality-improvement initiatives now are capturing data regarding adherence to practice guidelines and contemporary patterns of care for ACS. This comprehensive evaluation of ACS treatment will help guide efforts designed to promote evidence-based care and ultimately determine the effect of widespread implementation of practice guidelines on clinical outcomes. The shifting model of care for ACS therefore suggests that quality improvement and monitoring of adherence to practice guidelines should be considered components of optimal clinical practice. [References: 50]

Salyapongse, A., and J. D. Hatch. "Advances in the management of medial elbow pain in baseball pitchers." *Current Sports Medicine Reports.* 2, no. 5(2003): 276-80 UI 12959710.

Overhead-throwing athletes, particularly baseball pitchers, subject their elbows to tremendous amounts of valgus stress during the throwing motion. As a result of this stress, baseball pitchers are at considerable risk for injury. The proper functioning and stability of the elbow depends upon the bony articulations and soft tissue structures. The stresses placed across the elbow joint with repetitive throwing can lead to injury. Although the majority of injuries encountered are overuse injuries, acute injuries can also occur. Proper and timely diagnosis and treatment of these throwers is critical, to allow for the athlete's successful return to competition. [References: 19]

Snyder, M., and J. Wieland. "Complementary and alternative therapies: what is their place in the management of chronic pain?" *Nursing Clinics of North America.* 38, no. 3(2003): 495-508 UI 14567205.

Nurses have used complementary therapies for many years to relieve anxiety, promote comfort, and reduce or alleviate pain. The therapies described in this article are examples of the many therapies available for nurses to consider when planning care for patients with chronic pain. The increasing body of scientific knowledge is providing more guidance about the efficacy of specific therapies. As with all interventions, ongoing evaluation about the effectiveness of a therapy for each patient is an important component of quality nursing care. Complementary therapies provide an avenue for nurses to be autonomous in furthering the relief of chronic pain, as many of these therapies fall within the domain of nursing. Incorporating selected therapies into the plan of care provides multiple opportunities for nurses to demonstrate caring, a premier characteristic of nursing. A number of the complementary therapies, such as journaling, hand massage, and imagery, can be taught to patients and their families, thus promoting self-care. Anecdotal evidence and findings from numerous smaller studies provide some support for the use of many complementary therapies to manage chronic pain or their use as adjuncts in the treatment regimen. Still, the nurse must weigh the risks and benefits before suggesting a therapy to a patient. Evaluating the effectiveness of the complementary therapy to promote comfort in patients with chronic pain is essential. Obtaining this information is not only critical to the care of a particular patient, but these data will assist nurses in learning more about specific therapies. Most importantly, nurses need to pursue research to further the scientific basis for many of the complementary therapies. [References: 51]

Sokka, T. "Assessment of pain in patients with rheumatic diseases." *Best Practice & Research in Clinical Rheumatology.* 17, no. 3(2003): 427-49 UI 12787511.

Pain is the most prominent symptom in people with musculoskeletal disorders and the most common reason for patients to seek medical help. However, pain generally is not recorded quantitatively in usual medical care. A quantitative measure of pain is not needed in acute medical care but is essential over long periods as patients and health professionals cannot gauge accurately changes in levels of pain over years. The experience of pain is subjective, and early efforts by health professionals to estimate pain through an 'objective' measure of pain status were useful in clinical research but not in clinical care. Over the last three decades, self-report questionnaires have been developed in which a patient may record quantitatively a pain score, as well as other data concerning clinical status, which may be repeated over time to discern whether patients are improved, similar or worse. The most robust quantitative pain measure appears to be a simple 10-cm visual analogue scale (VAS) which can be completed by the patient and scored by a health professional in less than 30 s. These data cannot be obtained from any source other than the patient. Pain scores are correlated with 'objective' measures such as radiographs, laboratory tests and physical examination findings, but more strongly correlated with scores for functional status and psychological distress in patients with rheumatic diseases. It is recommended that quantitative assessment of pain be included at each visit in routine rheumatology care, along with assessment of functional disability, global status and other patient variables, using a patient self-report questionnaire to improve patient care.

Stamer, U. M., et al. "Impact of CYP2D6 genotype on postoperative tramadol analgesia." *Pain.* 105, no. 1-2(2003): 231-8 UI 14499440.

Genetic polymorphisms result in absent enzyme activity of CYP2D6 (poor metabolizers, PM) in about 10% of the Caucasian population. This study investigates whether the PM genotype has an impact on the response to tramadol analgesia in

postoperative patients. A prospective study design was used and 300 patients recovering from abdominal surgery were enrolled. After titration of an individual loading dose, patients could self-administer 1 ml bolus doses of the drug combination tramadol 20 mg/ml, dipyrone 200 mg/ml and metoclopramide 0.4 mg/ml via patient-controlled analgesia (PCA). Patients' genotype was analyzed considering the most prevalent PM associated CYP2D6 mutations using a real-time PCR and hybridization based genotyping method. Demographic data, surgery related variables, pain scores, analgesic consumption and need for rescue medication were compared between extensive metabolizers (EM) and PM. The primary outcome criterion 'response' was defined as responder or non-responder status by the need for rescue medication and patients' satisfaction at the final interview. Demographic and surgery related data were comparable between EM (n=241) and PM (n=30). The percentage of non-responders was significantly higher in the PM group (46.7%) compared with the EM group (21.6%; p=0.005). Tramadol loading dose amounted to 108.2+/-56.9 and 144.7+/-22.6 mg (p<0.001) in EM and PM, respectively. More patients displaying the PM genotype needed rescue medication in the recovery room and during PCA period than patients with at least one wild type allele (21.6 versus 43.3%, p=0.02). PM for CYP2D6 showed a lower response rate to postoperative tramadol analgesia than EM. Therefore, CYP2D6 genotype has an impact on analgesia with tramadol. Pharmacogenetics may explain some of the varying response to pain medication in postoperative patients.

Talu, G. K., et al. "Intratunical bupivacaine and methylprednisolone instillation for scrotal pain after testicular sperm retrieval procedures." *Asian Journal of Andrology.* 5, no. 1(2003): 65-7 UI 12647006.

AIM: To investigate the effect of intratunical instillation of bupivacaine and methylprednisolone for scrotal pain, swelling and peritesticular fibrosis due to testicular sperm retrieval procedures. METHODS: A total of 65 patients were randomly divided into two groups. In the instillation group (GI), 34 patients were administered 2.5 mL of 0.5 % bupivacaine combined with 10 mg/ml methylprednisolone before closure of the tunica vaginalis. In the control group (GC), 31 patients only received analgesics postoperatively by intramuscular route. The pain (by visual analogue scale, VAS) and duration of pain-free period after surgery between the two groups were evaluated at 2 and 4 h and at days 2 and 7 postoperatively. RESULTS: The mean pain scores were significantly lower in the GI than in the GC group at 2 and 4 h after surgery (P<0.05 and P<0.01, respectively). The mean duration of pain free interval after the procedure was 47.8 +/-16.9 (12-72) h in GI, which was significantly longer than that in GC [(9.9 +/-3.6; 4-20) h]. Besides, in the GI, 29 % of patients were completely free from pain and 67 % had no scrotal swelling, but in the GC, all the patients required additional NSAID injection due to pain and only 3 % had no scrotal swelling. CONCLUSION: This study confirms that direct intratunical instillation of bupivacaine and methylprednisolone around the testis reduces the postoperative pain, scrotal swelling and peritesticular fibrosis.

Tse, M. M., J. K. Ng, and J. W. Chung. "Visual stimulation as pain relief for Hong Kong Chinese patients with leg ulcers." *Cyberpsychology & Behavior.* 6, no. 3(2003): 315-20 UI 12855089.

Analgesic potential of visual stimulation was examined in 33 patients with leg ulcers in a randomized, controlled, crossover clinical trial. Patients were alternating between wearing an eyeglass display with soundless VCD broadcast (V-sessions) and a static blank screen (B-sessions) while receiving superficial debridement and wound dressing for their leg ulcers. A significant reduction in pain scores was found during V-sessions (VAS 67.7 +/- 28.4 vs. 25.6 +/- 29.8 when V-sessions vs. B-sessions, with p < 0.01). Age was positively correlated with the improvement in VAS, whereas gender, residency, and the underlying medical conditions were not correlated with

the improvement in pain score. The use of visual stimulation might be beneficial to both genders, in an older age group regardless of the underlying medical conditions. This is the pioneer use of visual stimulation as a non-pharmacological adjuvant to pain relief among a local Chinese population. The study will certainly add knowledge to the existing pain relief methods.

Vallerand, A. H. "The use of long-acting opioids in chronic pain management." *Nursing Clinics of North America.* 38, no. 3(2003): 435-45 UI 14567201.

The consensus statement from the American Pain Society and American Academy of Pain Medicine states that the undertreatment of pain is unjustified [6]. It has been suggested that opioid therapy can be used effectively to treat noncancer pain in a subset of patients [26], and this is becoming more acceptable [3]. Providing sustained analgesia is an important aspect of therapy, and medications should be administered on an around-the-clock basis, because regular administration of doses maintains a constant level of drug in the body and helps prevent recurrence of pain. Ideal treatment for persistent pain is a long-acting opioid administered around the clock to prevent baseline pain, with the use of short-acting opioids as supplemental agents for breakthrough pain. Controlled-release formulations can lessen the inconvenience associated with around-the-clock administration of short-acting opioids. Sustained analgesia also can be achieved with transdermal fentanyl, which combines a strong opioid with a 72-hour release profile and the benefits of a parenteral route, avoiding first-pass metabolism. Controlled-release formulations of morphine and oxycodone are available in the United States, and hydromorphone preparations are being reviewed for approval. Clinical experience with these formulations and transdermal fentanyl indicates that these agents are equally effective in controlling pain. Studies have demonstrated improved quality of life with the transdermal route and with controlled-release morphine and oxycodone. Because of patch reapplication every 72 hours, the transdermal route also enhances compliance. Use of an opioid without the need for oral or intravenous administration and the opportunity to improve compliance are among the advantages of the transdermal route in clinical practice. The nurse has an important role in the management of patients receiving long-acting opioids for chronic noncancer pain, Facilitation of the conversion from short-acting to long-acting opioids may be the initial step. Individualization of therapy to determine which route and product best suits the patient's needs and lifestyle can be accomplished through a comprehensive nursing assessment. Titration of dose along with institution of a short-acting opioid for break-through pain may require frequent interventions that a nurse familiar with the patient can provide. Prevention and management of opioid-related adverse events are essential for effective opioid therapy. Providing patient and family education regarding administration, monitoring, and management of opioid therapy is an important nursing role. Lastly, documentation of pain level, functional status, and opioid-related adverse events is required for each contact with the patient, to make this information available to all who assist in the management of the patient's pain. Chronic noncancer pain is an experience that affects all aspects of a patient's life. Effective pain management with long-acting opioids may help the patient to focus on the positive aspects of life, decreasing the focus on pain. [References: 35]

Whiteside, L. A. "Routine patellar resurfacing: unwise and unwarranted.[comment]." *Orthopedics.* 26, no. 7(2003): 685, 687 UI 12875562.